

REMARKS/ARGUMENTS

The present Amendment is in response to the Office Action having a mailing date of March 30, 2005. Claims 1-22 are pending in the present Application. Applicant has amended claims 1, 6-8, and 10-12. Consequently, claims 1-22 remain pending in the present Application.

Applicant has provided replacement drawings for Figures 1B, 1C, 5, and 6. Applicant has amended Figure 1B to harmonize Figure 1B with the description on page 4, line 11-page 5, line 15. Applicant has amended Figure 1C to include the legend "Prior Art". Applicant has amended the specification to correct the errors cited by the Examiner. Accordingly, Applicant respectfully submits that no new matter has been added.

In the above-identified Office Action, the Examiner indicated that claims 6-8 and 10 include allowable subject matter. Consequently, Applicant has amended claims 6-8 and 10 to be in independent form incorporating the limitation of the base claim and any intervening claim. Accordingly, Applicant respectfully submits that claims 6-8 and 10 are allowable over the cited references.

In the above-identified Office Action, the Examiner rejected claims 1-12 under 35 U.S.C. § 102 as being anticipated by the Background of the Invention (BOI) or U.S. Patent No. 6,391,483 B1 (Zhu).

Applicant respectfully traverses the Examiner's rejection. Claims 6-8 and 10 are, as discussed above, allowable over the cited references. Independent claims 11 and 12 recite a magnetic memories in which the magnetic elements includes a passivation layer "including at least one of AlN , $\text{Si}_x\text{N}_y\text{H}_z$ where x, y, and z are numbers, Ta_3O_4 , and at least one material having a first stoichiometry if the plurality of layers includes a tunneling barrier layer including the at least one material having the first stoichiometry.

Applicant agrees that the BOI and Zhu describe magnetic elements having adjacent insulating layers. Zhu also states that the surrounding insulator may be AlO. However, Applicant has found no mention in the BOI or Zhu of a passivation layer including AlN, $\text{Si}_x\text{N}_y\text{H}_z$ where x, y, and z are numbers, or Ta_3O_4 . Moreover, Applicant has found no mention in either the BOI or Zhu of the passivation layer including at least one material having a first stoichiometry if the plurality of layers includes a tunneling barrier layer including the at least one material having the first stoichiometry. Consequently, neither the BOI nor Zhu teach or suggest such passivation layers. Accordingly, Applicant respectfully submits that claims 11 and 12 are allowable over the cited references.

Claim 1 recites a magnetic element including a plurality of layers and a passivation layer covering at least a portion of the plurality of sides. Claim 1 further recites that the passivation layer is an oxygen diffusion barrier layer composed of at least one material free of SiN and AlO.

In contrast, the BOI describes a system in which the material surrounding the magnetic element is typically SiO_2 . Although not including SiN and AlO, such a material is not an oxygen barrier. Similarly, Zhu describes a system that surrounds the magnetic element with an insulator. Zhu goes on to state that the insulator might be SiN or AlO. However, Applicant has found no specific mention in Zhu of the insulator being a barrier to oxygen diffusion. In addition, Zhu's description of specific materials includes SiN and AlO, but not other stoichiometries of these materials and not other materials which may be barriers to oxygen diffusion. Consequently, neither the BOI nor Zhu teach or suggest the magnetic element recited in claim 1. Accordingly, Applicant respectfully submits that claim 1 is allowable over the cited references.

Claims 2-5 and 9 depend on independent claim 1. Consequently, the arguments herein with respect to claim 1 apply with full force to claims 2-5 and 9. Accordingly, Applicant respectfully submits that claims 2-5 and 9 are allowable over the cited references.

Furthermore, claims 5 and 9 recite that the passivation layer includes Si_3N_4 and Al_xO_y , where x and y are numbers, respectively. The BOI fails to mention the use of such materials in the Zhu describes passivation layers that include SiN and AlO for the insulator surrounding the magnetic elements. However, Applicant can find no mention in Zhu fails of the possibility that materials including the elements Si and N or the elements Al and O, but having different stoichiometries might be used. Consequently, Zhu and the BOI fail to teach or suggest limitations recited in claims 5 and 9. Accordingly Applicant respectfully submits that claims 5 and 9 are separately allowable over the cited references.

Applicant's attorney believes that this application is in condition for allowance. Should any unresolved issues remain, Examiner is invited to call Applicant's attorney at the telephone number indicated below.

Respectfully submitted,

SAWYER LAW GROUP LLP

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Date

/Janyce R. Mitchell/ Reg. No. 40,095
Janyce R. Mitchell
Attorney for Applicant(s)
(650) 493-4540